

Remarks

Claims 1-16 are pending in this application. Claims 1, 4-7, 10, 12 and 16 have been amended. Claims 1-16 have been rejected as outlined below. Applicants respectfully request the attached abstract be entered in place of the abstract filed on March 16, 2001. Additionally, applicants have attached a substitute specification herewith as holes were punched through the text of the previous specification. The substitute specification does not contain new matter.

1. Response to rejection under 35 USC 101

The examiner has rejected claims 10, 12, 15 and 16 under 35 USC 101 because the claimed invention is directed to non-statutory subject matter. Applicants respectfully request the rejection be removed in light of the above amendments to these claims.

2. Response to rejection under 35 USC 112, second paragraph

The examiner has rejected claims 1-9, 11, 13 and 14 under 35 USC 112, second paragraph as indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The test of definiteness is whether the scope of the claim is clear to a hypothetical person possessing the ordinary level of skill in the pertinent art. MPEP §2171. Applicants have amended some of the rejected claims above in order to point out and distinctly claim the invention. However, there are some terms with which applicants believe that the scope of the claim would be clear to a person of ordinary level of skill in the art.

The examiner states that it is unclear what quantification establishes the meets and

bounds of the claim "comminuted" and "fine-particle." Applicants assert that one of ordinary skill in the art would understand that "comminuted" and "fine-particle" refer to the same particle size. "Comminuted" refers to fine particles obtained by a comminution process whereas "fine-particle" also includes materials which are intrinsically in powdery or pulverulent form due to their preparation processes. Accordingly, one of ordinary skill in the art would understand the scope of the claim as disclosed by the instant claim 1.

The examiner rejects the term "rubbery" of claim 1 as indefinite. However, applicants assert that one of ordinary skill in the art would know that the invention would involve thermoplastic elastomers having the mechanical and elastic properties of rubber. Indeed, the Patent Office Board of Appeals found that the term "rubbery material" was not unduly broad when the novelty of the invention was related to another composition. *Ex part Westfahl*, 92 USPQ 384, 386 (POBA 1951). In this instance, the invention is related to an overall process and the thermoplastic elastomers are related to one aspect of the invention. Accordingly, the term "rubbery" is not so broad as to render the claim indefinite so that one of ordinary skill in the art would not know the scope of the claim.

Additionally, the examiner states that it is unclear which TG and crosslink, etc: applies to which polymer, 1st or 2nd. However, applicants point to page 3, lines 10-19 of the instant specification. This describes the invention as having a first polymer material and second plastic which may be identical or may differ from one another. However, if the first polymer material differs from the second plastic, the first polymer material is a plastic in the form of a particulate, crosslinked plastic or of an elastomer with a glass transition

temperature below the glass transition temperature of the second plastic. As a result, if the two materials are the same they will have similar attributes, it is only when the two materials differ that the glass transition temperature of the first polymer material is below that of the second plastic.

The examiner states that the phrase "at about room temp.; is indefinite and unclear." However, the term "about" is not indefinite according to the MPEP §2173.05(b). Indeed, the MPEP cites case law that finds the term clear but flexible. Thus, one of ordinary skill in the art would be able to discern the scope of the claim.

The examiner states that the term "semifinished product" is unclear. However, applicants disclose examples of a semi-finished product as an injection molded product, a film, sheet, pipe or profile. (page 7, lines 12 to 14). It is well settled that a patent applicant may be his own lexicographer. *W.L. Gore & Associates, Inc. v. Garlock, Inc.* 220 USPQ 303, 316 (Fed. Cir. 1983). Thus, one of ordinary skill in the art would be able to discern the scope of the claim after reading the instant specification.

As a result of these remarks and the amendment to the claims, applicants respectfully request the rejection of claims 1-9, 11, 13 and 14 under 35 USC 112, second paragraph be withdrawn.

3. Response to rejection under 35 USC 112, first paragraph

The examiner has rejected claims 1-9, 11, 13 and 14 under 35 USC 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most

nearly connected, to make and/or use the invention. The examiner argues that the claims are beyond the scope of the specification because "polymers" and "plastics" are not disclosed as compatible articles if the 2 polymers differ as claimed only if they are the same is a polymer article disclosed. However, page 5 of applicants specification discloses that the first polymer materials are thermoplastics, thermoplastic elastomers, graft rubber, polymers based on renewable raw materials, or polymers or polymer mixtures based on starch. (Page 5, lines 7-9). Additionally, the specification goes on to disclose that, "the abovementioned materials are also suitable for use as second plastic, and in that case it is possible to use mixtures of these with polycarbonates." Thus, the specification discloses that the "second plastic" may be made of the same materials. These terms were merely used to distinguish between the first and second material as steps in the process. However, as the specification discloses that all of the first materials are suited as second materials, applicants have amended the claims to recite and first and second polymer material in order to more closely reflect the disclosure.

4. Response to rejection under 35 USC 102(b) or alternatively 103(a)

Claims 1-9, 11, 13 and 14 have been rejected under 35 USC 102(b) as anticipated by or in the alternative under 35 USC 103(a) as obvious over Kubanek GB 2194791. The examiner argues that the glass T_g follows from the polymers selected. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. Of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Alternatively, in order to establish a *prima facie* case of obviousness, the examiner must establish that the references teach or suggest all the claim limitations. MPEP §2143.

In this instance the examiner has not established that the reference cited teaches each and every element of the instant invention. Specifically, claim 1 of the instant invention requires that the first polymer material is allowed to swell with the deodorant. Specifically, the instant disclosure describes this as "the absorption of the odorant into the polymer matrix or, respectively, the polymer network of the first polymer, which is used as a carrier." (Page 2, 22-25) The disclosure goes on to distinguish the invention over the prior art that contains "merely pores charged with odorant, without any loading of the polymer skeleton." According to the present invention, specific polymers are to be selected as carrier materials for the odorant, which polymers are characterized by the Tg as specified in claim 1. These polymers differ from the polymers used according to Kubanek in that they are non-porous, crosslinked polymer with elastic properties and a Tg of $\leq 0^{\circ} \text{C}$ and thus do not contain pores. Thus, polymers which contain the same monomers do not necessarily have the same Tg.

In contrast, the Kubanek reference requires "powdery, porous carrier material," as described in claims 1-3 of the Kubanek reference. The disclosure of the Kubanek reference specifically requires 0.1 to 800 m²/g of powdery porous carrier material. (Page 1, lines 95-96). Indeed, the disclosure states, "Due to the large specific surface of the mentioned carrier types of scenting materials and their porous structure, they as active filler agents in plastics and can easily be colored with colors similar to those used for other

plastics." (Page 1, lines 124-129).

Accordingly, the odorant of the instant invention is not adsorbed into a porous material as in the Kubanek process, but the odorant of the instant invention is absorbed from a microscopically small network. Therefore, the Kubanek process does not anticipate nor does it render obvious the instant invention as it does not contain each and every element of the instant invention. Specifically, the Kubanek reference does not disclose a carrier material that is non-porous with the specific Tg as claimed and described in the instant invention.

To the extent necessary, applicant(s) petition for an Extension of Time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees to Deposit Account No. 11-0345. Please credit any excess fees to such deposit account.

Respectfully submitted,
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VERSION WITH MARKINGS TO SHOW CHANGES MADE IN THE CLAIMS

Please amend claims 1, 4-7, 10, 12, 15 and 16 as follows:

1.(amended) A process for preparing odorant polymers or plastics, in which comminuted

or fine-particle first polymer material is mixed with a desired odorant, allowed to swell [for a predetermined period], and, after being allowed to swell with the odorant, is mixed with a second [plastic] polymer material, where the first polymer material differs from the second [plastic] polymer material and is selected from particulate cross-linked plastics or from thermoplastic elastomers which have rubbery properties, with a glass transition temperature T_g of $\leq 0^\circ\text{C}$, which is below the glass transition temperature of the second [plastic] polymer material.

4.(amended) A process['] as claimed in claim 1, wherein the first [plastic] polymer material is mixed and allowed to swell with the odorant in a closed container.

5.(amended) A process as claimed in claim 1, wherein the first polymer material in the form of a powder is mixed with the odorant, allowed to swell, and then further processed with the second [plastic] polymer material in ground, powder or pellet form under high pressure and at about room temperature, and with heating to a temperature which is below the glass transition temperature of the second [plastic] polymer material, or with heating to a temperature which is above the glass transition temperature either of the first polymer material or of the second [plastic] polymer material.

6.(amended) A process as claimed in claim 1, wherein the first polymer [roaterial] material used comprises thermoplastics, thermoplastic elastomers, graft rubber, polymers [based on] of renewable raw materials, [or] polymers or [else] polymer mixtures [based on] of starch.

7.(amended) A process as claimed in claim 6, wherein the second [plastic] polymer material is selected from the group consisting of polylactic acid, polyurethane, polyamides, polyesters, polyester[-]amides, and polybutylene terephthalates, and further consisting of [or from po1yrners] polymers, copolymers, block copolymers, triblock copolymers[, or] and graft copolymers of monomers selected from the group consisting of styrene, butadiene, acrylonitrile, (meth)acrylate, [or of] and acrylic esters, and [also] further consisting of mixtures of said materials [mixtures of these] with polycarbonates.

10.(amended) [The use of the odorant polymer or plastic as claimed in claim 8 for defense against animals] The process of applying the odorant polymer or plastic of claim 8 to an article for the defense against animals.

12.(amended) [The use of the molding composition as claimed in claim 11 for altering and/or improving the odor properties of articles] The process of applying the composition of claim 11 to an article for altering and/or improving the odor

properties of the articles.

15.(amended) [The use of the article as claimed in claim 13 for improving room air quality]

The process of utilizing the article of claim 13 for improving room air quality.

16.(amended) [The use of the article as claimed in claim 13 for defense against animal

pests] The process of utilizing the article of claim 13 for defense against animal

pests.

VERSION WITH MARKINGS TO SHOW CHANGES MADE IN THE ABSTRACT

Please replace the abstract as filed with the following:

ABSTRACT

The invention relates to a process for preparing odorant polymers or plastics, in which a comminuted or fine-particle first polymer material is mixed with a desired odorant, allowed to swell for a predetermined period, and then further processed under a predetermined pressure and at a predetermined period, and then further processed under a predetermined pressure and at a predetermined temperature. After the first polymer material has been allowed to swell with the odorant it may be mixed with a second plastic. The first polymer material and the second plastic may be identical or differ from one another. The second plastic used in producing odorant polymers is also a polymer. The invention further relates to the odorant polymer or odorant plastic prepared by the process of the invention, and to a molding composition or article which comprises the odorant polymer or the odorant plastic.

COPY OF ALL CLAIMS

1. A process for preparing odorant polymers or plastics, in which comminuted or fine-particle first polymer material is mixed with a desired odorant, allowed to swell, and, after being allowed to swell with the odorant, is mixed with a second polymer material, where the first polymer material differs from the second polymer material and is selected from particulate cross-linked plastics or from thermoplastic elastomers which have rubbery properties, with a glass transition temperature T_g of $\leq 0^\circ\text{C}$, which is below the glass transition temperature of the second polymer material.
2. The process as claimed in claim 1, wherein the odorant used comprises an odorant oil.
3. A process as claimed in claim 1, wherein the odorant used comprises pheromones and/or ecomones.
4. A process as claimed in claim 1, wherein the first polymer material is mixed and allowed to swell with the odorant in a closed container.
5. A process as claimed in claim 1, wherein the first polymer material in the form of a powder is mixed with the odorant, allowed to swell, and then further processed with the second polymer material in ground, powder or pellet form under high pressure and at about room temperature, and with heating to a temperature which is below the glass transition temperature of the second polymer material, or with heating to a temperature which is above the glass transition temperature either of the first

- polymer material or of the second polymer material.
6. A process as claimed in claim 1, wherein the first polymer material used comprises thermoplastics, thermoplastic elastomers, graft rubber, polymers of renewable raw materials, polymers or polymer mixtures of starch.
 7. A process as claimed in claim 6, wherein the second polymer material is selected from the group consisting of polylactic acid, polyurethanes, polyamides, polyesters, polyesteramides, and polybutylene terephthalates, and further consisting of polymers, copolymers, block copolymers, triblock copolymers and graft copolymers of monomers selected from the group consisting of styrene, butadiene, acrylonitrile, (meth)acrylate, and acrylic esters, and further consisting of mixtures of said materials with polycarbonates.
 8. An odorant polymer or an odorant plastic obtained by the process as claimed in claim 1.
 9. An odorant polymer or odorant plastic as claimed in claim 8 in pellet form.
 10. The process of applying the odorant polymer or plastic of claim 8 to an article for the defense against animals.
 11. A molding composition which comprises an odorant polymer or odorant plastic as claimed in claim 8.
 12. The process of applying the composition of claim 11 to an article for altering and/or improving the odor properties of the articles.
 13. An article which comprises an odorant polymer or an odorant plastic as claimed in

claim 8.

14. An article as claimed in claim 13 in the form of a plastic molding or a semifinished product.
15. The process of utilizing the article of claim 13 for improving room air quality.
16. The process of utilizing the article of claim 13 for defense against animal pests.